

Amendment to the Claims:

Please amend the claims as follows:

Please cancel claims 7 to 9, without prejudice or disclaimer.

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): An isolated, synthetic or recombinant nucleic acid comprising:

(a) a nucleic acid sequence encoding a polypeptide having alpha amylase activity, wherein the nucleic acid sequence has at least 90% [[85%]] sequence identity to the [[a]] sequence of as set forth in SEQ ID NO:125,

(b) a nucleic acid sequence encoding a polypeptide having alpha amylase activity, wherein the amino acid sequence has at least 90% sequence identity to the [[a]] sequence of as set forth in SEQ ID NO:126; [[or]]

(c) the nucleic acid of (a) or (b) and comprising a sequence encoding at least one conservative amino acid substitution comprising: replacement of an aliphatic amino acid with another aliphatic amino acid; replacement of a Serine with a Threonine or vice versa; replacement of an acidic residue with another acidic residue; replacement of a residue bearing an amide group with another residue bearing an amide group; exchange of a basic residue with another basic residue; or replacement of an aromatic residue with another aromatic residue;

(d) the nucleic acid of (a), (b) or (c) encoding a polypeptide lacking a signal sequence;

(e) the nucleic acid of (a), (b), (c) or (d) further comprising a heterologous sequence;

(f) the nucleic acid of (e), wherein the heterologous sequence comprises a sequence encoding a heterologous signal sequence;

(g) the nucleic acid of (e), wherein the heterologous sequence comprises a sequence encoding an N-terminal identification peptide; or

(h) sequences completely complementary to (a), [[or]] (b), (c), (d), (e), (f) or (g).

Claim 2 (currently amended): An isolated, synthetic or recombinant nucleic acid that hybridizes under stringent conditions to SEQ ID NO:125, wherein the nucleic acid comprises a sequence selected from the group consisting of:

(a) a nucleic acid sequence encoding a polypeptide having alpha amylase activity, wherein the nucleic acid sequence has at least 90% [[85%]] sequence identity to the [[a]] sequence of as set forth in SEQ ID NO:125;

(b) a nucleic acid sequence encoding a polypeptide having alpha amylase activity, wherein the nucleic acid sequence has at least 90% sequence identity to the [[a]] sequence of as set forth in SEQ ID NO:126;

(c) the nucleic acid of (a) or (b) encoding a polypeptide lacking a signal sequence;

(d) the nucleic acid of (a), (b) or (c) further comprising a heterologous sequence;

(e) the nucleic acid of (d), wherein the heterologous sequence comprises a sequence encoding a heterologous signal sequence;

(f) the nucleic acid of (e), wherein the heterologous sequence comprises a sequence encoding an N-terminal identification peptide; and

(g) [[(c)]] sequences completely complementary to (a), [[or]] (b), (c), (d), (e) or (f);

wherein the stringent conditions comprise a wash step comprising 30 minutes at room temperature in a solution comprising 150 mM NaCl, 20 mM Tris hydrochloride, pH 7.8, 1 mM Na₂EDTA, 0.5% SDS, followed by a 30 minute wash in fresh solution at Tm-10°C.

Claim 3 (currently amended): An isolated, synthetic or recombinant nucleic acid encoding a polypeptide having alpha amylase activity that hybridizes under stringent conditions to a sequence selected from the group consisting of: (a) the [[a]] sequence of as set forth in SEQ ID NO:125; (b) a sequence encoding a polypeptide having the [[a]] sequence of as set forth in SEQ ID NO:126; and, (c) sequences completely complementary to (a) or (b);

wherein the stringent conditions comprise a wash step comprising 30 minutes at room temperature in a solution comprising 150 mM NaCl, 20 mM Tris hydrochloride, pH 7.8, 1 mM Na₂EDTA, 0.5% SDS, followed by a 30 minute wash in fresh solution at Tm-10°C, and wherein the sequence encodes a polypeptide having alpha amylase activity.

Claim 4 (previously presented): The isolated, synthetic or recombinant nucleic acid of claim 2 or claim 3, wherein the $T_m = 81.5 + 16.6(\log [Na^+]) + 0.41(\text{fraction G+C}) - (0.63\% \text{ formamide}) - (600/N)$ where N is the length of the nucleic acid.

Claim 5 (canceled)

Claim 6 (currently amended): The isolated, synthetic or recombinant nucleic acid of claim 1 or claim 2, wherein the nucleic acid sequence identity is determined by using a method comprising use of a BLASTN program algorithm with default parameters or the polypeptide sequence identity is determined by using a method comprising use of a BLAST P program algorithm with default parameters.

Claims 7 to 9 (canceled)

Claim 10 (currently amended): An isolated, synthetic or recombinant nucleic acid comprising (a) a sequence encoding a polypeptide having alpha amylase activity consisting of a sequence having at least 98% sequence identity to 150 consecutive amino acid residues of the amino acid sequence of SEQ ID NO:126; and (b) sequences completely complementary to (a).

Claim 11 (currently amended): An isolated, synthetic or recombinant nucleic acid comprising (a) a sequence encoding a polypeptide having alpha amylase activity consisting of a sequence having at least 99% sequence identity to 100 consecutive amino acid residues of the amino acid sequence of SEQ ID NO:126; and (b) sequences completely complementary to (a).

Claim 12 (currently amended): An isolated, synthetic or recombinant nucleic acid comprising (a) a sequence encoding a polypeptide having alpha amylase activity consisting of a sequence having at least 90% sequence identity to about 300 consecutive residues of the nucleic acid sequence of SEQ ID NO:125; or (b) sequences completely complementary to (a).

Claim 13 (canceled)

Claim 14 (previously presented): The isolated, synthetic or recombinant nucleic acid of claim 1, wherein the sequence identity of (a) or (b) is at least about 97%.

Claim 15 (previously presented): The isolated, synthetic or recombinant nucleic acid of claim 1, wherein the sequence identity of (a) or (b) is at least about 95%.

Claim 16 (previously presented): The isolated, synthetic or recombinant nucleic acid of claim 1 or claim 2, wherein the sequence identity is determined using a sequence comparison algorithm comprising FASTA version 3.0t78 with the default parameters.

Claim 17 (previously presented): A probe comprising a nucleic acid comprising at least 500 consecutive bases of a sequence as set forth in claim 1 or claim 2, wherein the probe can hybridize to an amylase-encoding gene under stringent conditions comprising a wash step comprising a wash for 30 minutes at room temperature in a solution comprising 150 mM NaCl, 20 mM Tris hydrochloride, pH 7.8, 1 mM Na₂EDTA, 0.5% SDS, followed by a 30 minute wash in fresh solution.

Claims 18 to 46 (canceled)

Claim 47 (currently amended): A method of producing a polypeptide having an amino acid sequence having at least about 90% sequence identity to the amino acid [[a]] sequence of as set forth in SEQ ID NO:126, comprising the steps of introducing a nucleic acid encoding the polypeptide into a host cell under conditions that allow expression of the polypeptide, wherein the expressed polypeptide has alpha amylase activity.

Claim 48 (currently amended): A method of producing a polypeptide having amylase activity, comprising the steps of: providing a nucleic acid having the nucleic acid [[a]] sequence of as set forth in claim 1; and introducing the nucleic acid encoding the polypeptide, operably linked to a promoter, into a host cell under conditions that allow expression of the polypeptide.

Claims 49 to 73 (canceled)

Claim 74 (withdrawn – currently amended): An assay for identifying a polypeptide having amylase activity comprising the steps of:

- (a) providing a nucleic acid as set forth in claim 1, ~~10 or 12~~;
- (b) expressing the nucleic acid to provide a polypeptide;
- (c) contacting the polypeptide, with a substrate molecule under conditions which allow the polypeptide to function; and
- (d) detecting either a decrease in an amount of a substrate or an increase in an amount of a reaction product which results from a reaction between said polypeptide and said substrate; wherein a decrease in the amount of the substrate or an increase in the amount of the reaction product is indicative of existence of the functional polypeptide.

Claim 75 (currently amended): A nucleic acid probe for identifying or isolating an amylase-encoding gene, comprising an oligonucleotide, wherein the oligonucleotide consists consisting of at least about 75 contiguous nucleotides of a sequence as set forth in claim 2; and which hybridizes under stringent conditions to SEQ ID NO:125 and the stringent hybridization conditions comprise a wash step comprising a wash for 30 minutes at room temperature in a solution comprising 150 mM NaCl, 20 mM Tris hydrochloride, pH 7.8, 1 mM Na₂EDTA, 0.5% SDS, followed by a 30 minute wash in fresh solution.

Claim 76 (previously presented): The nucleic acid probe of claim 75, wherein the oligonucleotide comprises DNA or RNA.

Claim 77 (currently amended): The nucleic acid probe of claim 75, wherein the oligonucleotide has at least 98% sequence identity to 75 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:125.

Claim 78 (currently amended): The nucleic acid probe of claim 75, wherein the oligonucleotide consists of at least 75, ~~100 or 150~~ contiguous nucleotides having at least 96% sequence identity to the nucleic acid sequence of SEQ ID NO:125, ~~or the oligonucleotide consists of 200 contiguous nucleotides having at least 95% sequence identity to SEQ ID NO:125~~.

Claim 79 (previously presented): The nucleic acid probe of claim 78, wherein the sequence identity is at least 97%.

Claim 80 (currently amended): The nucleic acid probe of claim 75, wherein the oligonucleotide consists of at least 300, ~~400 or 500~~ contiguous nucleotides having at least 90% sequence identity to SEQ ID NO:125.

Claims 81 to 83 (canceled)

Claim 84 (previously presented): The nucleic acid probe of claim 75, wherein the oligonucleotide consists of at least 150 contiguous nucleotides of the sequence of claim 2.

Claim 85 (previously presented): The nucleic acid probe of claim 84, wherein the oligonucleotide consists of at least 200 contiguous nucleotides of the sequence of claim 2.

Claim 86 (currently amended): The nucleic acid probe of claim 75, wherein the oligonucleotide consists of a sequence [is] fully complementary to at least 50 contiguous nucleotides of SEQ ID NO:125.

Claim 87 (canceled)

Claim 88 (previously presented): The nucleic acid probe of claim 75, wherein the probe further comprises a detectable isotopic label.

Claim 89 (previously presented): The nucleic acid probe of claim 75, wherein the probe further comprises a detectable non-isotopic label selected from the group consisting of a fluorescent molecule, a chemiluminescent molecule, an enzyme, a cofactor, an enzyme substrate, and a hapten.

Claim 90 to 91 (canceled)

Claim 92 (previously presented): The nucleic acid probe of claim 75, wherein the stringent conditions comprise a wash step comprising 30 minutes at room temperature in a solution comprising 150 mM NaCl, 20 mM Tris hydrochloride, pH 7.8, 1 mM Na2EDTA, 0.5% SDS, followed by a 30 minute wash in fresh solution at Tm-10°C.

Claim 93 to 101 (canceled)

Claim 102 (previously presented): A cloning vector comprising a sequence that encodes a polypeptide having alpha amylase activity, said sequence comprising a sequence as set forth in claim 2.

Claim 103 (previously presented): A host cell comprising a nucleic acid having a sequence that encodes a polypeptide having alpha amylase activity, said sequence comprising a sequence as set forth in claim 2.

Claim 104 (previously presented): An expression vector capable of replicating in a host cell comprising a polynucleotide having a sequence as set forth in claim 2.

Claim 105 (previously presented): A vector as claimed in claim 102, wherein the vector is selected from the group consisting of viral vectors, plasmid vectors, phage vectors, phagemid vectors, cosmids, fosmids, bacteriophages, artificial chromosomes, adenovirus vectors, retroviral vectors, and adeno-associated viral vectors.

Claim 106 (previously presented): A host cell comprising an expression vector as claimed in claim 104.

Claim 107 (previously presented): A host cell as claimed in claim 103, wherein the host is selected from the group consisting of prokaryotes, eukaryotes, funguses, yeasts, and plants.

Claim 108 (withdrawn – currently amended): A method for liquifying a starch containing composition comprising contacting the starch with a polypeptide encoded by a nucleic acid comprising a sequence as set forth in claim 1, ~~10 or 12~~.

Claims 109 to 111 (canceled)

Claim 112 (withdrawn – currently amended): A method for washing an object comprising contacting said object with a polypeptide encoded by a nucleic acid comprising a sequence as set forth in claim 1, ~~10 or 12~~, under conditions sufficient for said washing.

Claim 113 (withdrawn – currently amended): A method for textile desizing comprising contacting said textile with a polypeptide encoded by a nucleic acid comprising a sequence as set forth in claim 1, ~~10 or 12~~, under conditions sufficient for said desizing.

Claim 114 (withdrawn – currently amended): A method for the treatment of lignocellulosic fibers, wherein the fibers are treated with a polypeptide encoded by a nucleic acid comprising a sequence as set forth in claim 1, ~~10 or 12~~, in an amount which is efficient for improving the fiber properties.

Claim 115 (withdrawn – currently amended): A method according to claim 113 for enzymatic deinking of recycled paper pulp, wherein the polypeptide encoded by a nucleic acid comprising a sequence as set forth in claim 1, ~~10 or 12~~ is applied in an amount which is efficient for effective deinking of the fiber surface.

Claim 116 (withdrawn – currently amended): A method for starch liquefaction comprising contacting said starch with a polypeptide encoded by a nucleic acid comprising a sequence as set forth in claim 1, ~~10 or 12~~ under conditions sufficient for said liquefaction.

Claim 117 (canceled)

Claim 118 (withdrawn – currently amended): A method for producing a high-maltose or a high-glucose syrup or a mixed syrup comprising:

liquefying starch using an effective amount of a polypeptide encoded by a nucleic acid comprising a sequence as set forth in claim 1, ~~10 or 12~~ to obtain a soluble starch hydrolysate; and saccharifying the soluble starch hydrolysate, thereby resulting in a syrup.

Claim 119 (withdrawn – currently amended): The method ~~as in any of claim 118 claims 108~~, wherein the starch is from a material selected from rice, germinated rice, corn, barley, wheat, legumes and sweet potato.

Claim 120 (withdrawn – currently amended): The method ~~as in any of claim 118 claims 108~~, further comprising addition of a second alpha amylase or a beta amylase or a combination thereof.

Claim 121 (withdrawn – currently amended): A method of increasing the flow of production fluids from a subterranean formation by removing a viscous, starch-containing,

damaging fluid formed during production operations and found within the subterranean formation which surrounds a completed well bore comprising:

allowing production fluids to flow from the well bore;
reducing the flow of production fluids from the formation below expected flow rates;
formulating an enzyme treatment by blending together an aqueous fluid and a polypeptide encoded by a nucleic acid comprising a sequence as set forth in claim 1, 10 or 12;
pumping the enzyme treatment to a desired location within the well bore;
allowing the enzyme treatment to degrade the viscous, starch-containing, damaging fluid, whereby the fluid can be removed from the subterranean formation to the well surface; and
wherein the enzyme treatment is effective to attack the alpha glucosidic linkages in the starch-containing fluid.

Claim 122 (previously presented): The method of claim 47, wherein the amino acid sequence has at least 97% sequence identity over a region of at least about 150 consecutive residues.

Claim 123 (previously presented): The method of claim 47, wherein the amino acid sequence has at least 99% sequence identity over a region of at least about 75, 100 or 150 consecutive residues.

Claim 124 (currently amended): The method of claim 47, wherein the nucleic acid sequence identity is determined by using a method comprising use of a BLASTN program algorithm with default parameters or the polypeptide sequence identity is determined by using a method comprising use of a BLAST P algorithm with default parameters.

Claim 125 (currently amended): The isolated, synthetic or recombinant nucleic acid of claim 1 or claim 2, wherein the nucleic acid encoding the polypeptide having alpha amylase activity has a nucleic acid [[a]] sequence having at least 96% sequence identity to SEQ ID NO:125 over a region of at least about 150 consecutive nucleotides.

Claim 126 (currently amended): The isolated, synthetic or recombinant nucleic acid of claim 2, wherein the nucleic acid sequence encodes a encoding the polypeptide having [[has]] at least 98% sequence identity to SEQ ID NO:126 over a region of at least about 150 consecutive amino acid residues.

Claim 127 (currently amended): The isolated, synthetic or recombinant nucleic acid of claim 126, wherein the nucleic acid sequence encodes a encoding the polypeptide having [[has]] at least 99% sequence identity to SEQ ID NO:126 over a region of at least about 150 consecutive amino acid residues.

Claim 128 (currently amended): A probe for identifying or isolating an amylase-encoding sequence, wherein the probe comprises comprising a nucleic acid having at least 90% [[85%]] sequence identity to the nucleic acid sequence of SEQ ID NO:125, wherein the probe can hybridize or bind to identify or isolate an amylase encoding gene by hybridizing to SEQ ID NO:125 under stringent conditions comprising a wash step comprising a wash for 30 minutes at room temperature in a solution comprising 150 mM NaCl, 20 mM Tris hydrochloride, pH 7.8, 1 mM Na₂EDTA, 0.5% SDS, followed by a 30 minute wash in fresh solution.

Claim 129 (currently amended): A probe comprising a nucleic acid having at least 95% sequence identity over 200 consecutive nucleotides of the nucleic acid sequence of SEQ ID NO:125, wherein the probe can hybridize to SEQ ID NO:125 under stringent conditions comprising a wash step comprising a wash for 30 minutes at room temperature in a solution comprising 150 mM NaCl, 20 mM Tris hydrochloride, pH 7.8, 1 mM Na₂EDTA, 0.5% SDS, followed by a 30 minute wash in fresh solution.

Claim 130 (currently amended): A method of producing a polypeptide encoded by a nucleic acid having at least 90% [[85%]] sequence identity to the nucleic acid sequence of SEQ ID NO:125, comprising the steps of introducing a nucleic acid encoding the polypeptide into a host cell under

conditions that allow expression of the polypeptide, wherein the expressed polypeptide has alpha amylase activity.

Claim 131 (previously presented): A method of producing a polypeptide encoded by a nucleic acid of claim 2, comprising the steps of introducing a nucleic acid encoding the polypeptide into a host cell under conditions that allow expression of the polypeptide, wherein the expressed polypeptide has alpha amylase activity.

Claim 132 (previously presented): A method of producing a polypeptide encoded by a nucleic acid of claim 10, comprising the steps of introducing a nucleic acid encoding the polypeptide into a host cell under conditions that allow expression of the polypeptide, wherein the expressed polypeptide has alpha amylase activity.

Claim 133 (previously presented): A method of producing a polypeptide encoded by a nucleic acid of claim 12, comprising the steps of introducing a nucleic acid encoding the polypeptide into a host cell under conditions that allow expression of the polypeptide, wherein the expressed polypeptide has alpha amylase activity.

Claim 134 (previously presented): The isolated, synthetic or recombinant nucleic acid of claim 1, wherein the sequence identity of (a) or (b) is at least about 98%.

Claim 135 (previously presented): The isolated, synthetic or recombinant nucleic acid of claim 1, wherein the sequence identity of (a) or (b) is at least about 99%.

Claim 136 (currently amended): An [[The]] isolated, synthetic or recombinant nucleic acid comprising (a) a nucleic acid of claim 12, wherein in step (a) the sequence encoding encodes a polypeptide having alpha amylase activity, wherein the nucleic acid consists consisting of a sequence having at least 90% sequence identity to about 400 consecutive residues of SEQ ID NO:125; or (b) sequences completely complementary to (a).

Claim 137 (currently amended): An [[The]] isolated, synthetic or recombinant nucleic acid comprising (a) a nucleic acid of claim 136, wherein in step (a) the sequence encoding encodes a polypeptide having alpha amylase activity, wherein the nucleic acid consists consisting of a sequence having at least 90% sequence identity to about 500 consecutive residues of SEQ ID NO:125; or (b) sequences completely complementary to (a).

Claim 138 (previously presented): A method of producing a polypeptide having amylase activity, comprising the steps of: providing a nucleic acid having a sequence as set forth in claim 10 or claim 12; and introducing the nucleic acid encoding the polypeptide, operably linked to a promoter, into a host cell under conditions that allow expression of the polypeptide.

Claim 139 (previously presented): A cloning or expression vector comprising a sequence that encodes a polypeptide having alpha amylase activity, said sequence comprising a sequence as set forth in claim 10 or 12.

Claim 140 (previously presented): A host cell comprising a nucleic acid having a sequence that encodes a polypeptide having alpha amylase activity, said sequence comprising a sequence as set forth in claim 10 or 12.

Claim 141 (previously presented): A cloning or expression vector capable of replicating in a host cell comprising a polynucleotide having a sequence as set forth in claim 10 or 12.

Claim 142 (previously presented): The cloning or expression vector of claim 139, wherein the vector is selected from the group consisting of viral vectors, plasmid vectors, phage vectors, phagemid vectors, cosmids, fosmids, bacteriophages, artificial chromosomes, adenovirus vectors, retroviral vectors, and adeno-associated viral vectors.

Claim 143 (currently amended): An isolated, synthetic or recombinant nucleic acid comprising (a) a nucleic acid sequence encoding a polypeptide having amylase activity, wherein the nucleic acid sequence has at least 95% sequence identity to [[a]] the nucleic acid sequence of as set forth in SEQ ID NO:125, (b) a nucleic acid sequence encoding a polypeptide having amylase activity, wherein the polypeptide has an amino acid sequence having [[has]] at least 95% sequence identity to [[a]] the amino acid sequence of as set forth in SEQ ID NO:126; or (c) sequences completely complementary to (a) or (b).

Claim 144 (previously presented): The isolated, synthetic or recombinant nucleic acid of claim 143, wherein the sequence identity in (a) or (b) is 97%.

Claim 145 (previously presented): The isolated, synthetic or recombinant nucleic acid of claim 143, wherein the sequence identity in (a) or (b) is 98%.

Claim 146 (previously presented): The isolated, synthetic or recombinant nucleic acid of claim 143, wherein the sequence in (a) is SEQ ID NO:125, and the sequence in (b) is SEQ ID NO:126.

Claim 147 (currently amended): A method for producing a feed comprising a recombinant amylase, the method comprising the steps of:

- (a) providing a nucleic acid comprising a sequence as set forth in claim 1,10 or 12;
- (b) providing a composition comprising a feed;
- (c) expressing the nucleic acid to produce a recombinant amylase; and
- (d) mixing the recombinant amylase and the feed-comprising composition, thereby producing a feed comprising a recombinant amylase.

Claim 148 (currently amended): A method of hydrolyzing a starch linkage comprising contacting a substance containing the starch with a polypeptide having amylase activity encoded by

a nucleic acid of claim 1, ~~10 or 12~~ under conditions which facilitate the hydrolysis of the starch linkage,

wherein optionally the starch is isolated or derived from rice, germinated rice, corn, barley, wheat, legumes, sweet potato, milo, sorghum, rye, bulger or a combination thereof,

and optionally the method further comprises addition of a second amylase, an alpha amylase or a beta amylase or a combination thereof.

Claim 149 (currently amended): A method of catalyzing the breakdown of a starch, comprising the step of contacting a sample containing starch with a polypeptide having amylase activity encoded by a nucleic acid of claim 1, ~~10 or 12~~ under conditions which facilitate the breakdown of the starch,

wherein optionally the starch is isolated or derived from rice, germinated rice, corn, barley, wheat, legumes, sweet potato, milo, sorghum, rye, bulger or a combination thereof,

and optionally the method further comprises addition of a second amylase, an alpha amylase or a beta amylase or a combination thereof.

Claim 150 (currently amended): A method for making an alcohol comprising contacting a starch-comprising composition with a polypeptide having amylase activity encoded by a nucleic acid of claim 1, ~~10 or 12~~.

Claim 151 (previously presented): The method of claim 150, wherein the method further comprises contacting the starch-comprising composition with a second polypeptide having amylase activity, or an alpha amylase activity, or a beta amylase, or another enzyme.

Claim 152 (previously presented): The method of claim 150, wherein the alcohol comprises a fuel ethanol.

Claim 153 (currently amended): A corn wet milling process comprising use of a polypeptide having amylase activity, wherein the polypeptide is encoded by a nucleic acid of claim 1,~~10 or 12~~.

Claim 154 (previously presented): The corn wet milling process of claim 152, wherein the process further comprises use of a second polypeptide having amylase activity, an alpha amylase activity, or a beta amylase, or another enzyme.

Claim 155 (currently amended): A baking process comprising use of a polypeptide having alpha amylase activity, wherein the polypeptide having amylase activity is encoded by a nucleic acid of claim 1,~~10 or 12~~.

Claim 156 (previously presented): The baking process of claim 155, wherein the baking process further comprises use of a second polypeptide having an amylase activity, an alpha amylase activity, or a beta amylase, or another enzyme.

Claim 157 (currently amended): A drilling process comprising use of a polypeptide having amylase activity, wherein the polypeptide having amylase activity is encoded by a nucleic acid of claim 1,~~10 or 12~~.

Claim 158 (previously presented): The drilling process of claim 157, wherein the drilling process further comprises use of a second polypeptide having an amylase activity, an alpha amylase activity, or a beta amylase, or another enzyme.

Claim 159 (currently amended): A brewing process comprising use of a polypeptide having amylase activity, wherein the polypeptide having amylase activity is encoded by a nucleic acid of claim 1,~~10 or 12~~.

Claim 160 (previously presented): The brewing process of claim 159, wherein the process further comprises use of a second polypeptide having an amylase activity, an alpha amylase activity, or a beta amylase, or another enzyme.

Claim 161 (currently amended): A method for textile processing comprising use of a polypeptide having amylase activity, wherein the polypeptide having amylase activity is encoded by a nucleic acid of claim 1,10 or 12.

Claim 162 (previously presented): The method for textile processing of claim 161, wherein the process further comprises use of a second polypeptide having an amylase activity, an alpha amylase activity, or a beta amylase, or another enzyme.

Claim 163 (currently amended): A method for paper or pulp processing comprising use of a polypeptide having amylase activity, wherein the polypeptide having amylase activity is encoded by a nucleic acid of claim 1,10 or 12.

Claim 164 (previously presented): The method for paper or pulp processing of claim 163, wherein the process further comprises use of a second polypeptide having an amylase activity, an alpha amylase activity, or a beta amylase, or another enzyme.

Claim 165 (currently amended): A method for making a beverage comprising a polypeptide having amylase activity, wherein the polypeptide having alpha amylase activity is encoded by a nucleic acid of claim 1,10 or 12.

Claim 166 (previously presented): The method for making a beverage of claim 165, further comprising a second polypeptide having an amylase activity, an alpha amylase activity, or a beta amylase, or another enzyme.

Claim 167 (new): An isolated, synthetic or recombinant nucleic acid comprising a sequence having at least 95% sequence identity to the sequence of SEQ ID NO:125 over a region of at least about 200 consecutive residues.

Claim 168 (new): An isolated, synthetic or recombinant nucleic acid comprising a sequence having at least 95% sequence identity to SEQ ID NO:125 over a region of at least about 300 consecutive residues, wherein the nucleic acid encodes a polypeptide having amylase activity.

Claim 169 (new): The isolated, synthetic or recombinant nucleic acid of claim 168, wherein the 95% sequence identity to SEQ ID NO:125 is over a region of at least about 400 consecutive residues.

Claim 170 (new): The isolated, synthetic or recombinant nucleic acid of claim 169, wherein the 95% sequence identity to SEQ ID NO:125 is over a region of at least about 500 consecutive residues.

Claim 171 (new): An isolated, synthetic or recombinant nucleic acid comprising a sequence encoding a polypeptide having alpha amylase activity having an amino acid sequence having at least 98% sequence identity to the amino acid sequence of SEQ ID NO:126 over a region of at least about 100 consecutive residues.

Claim 172 (new): An isolated, synthetic or recombinant nucleic acid comprising a sequence having at least 95% sequence identity to SEQ ID NO:125 over a region of at least about 100 consecutive residues, wherein the nucleic acid encodes a polypeptide having amylase activity.

Claim 173 (new): The isolated, synthetic or recombinant nucleic acid of claim 172, wherein the 95% sequence identity to SEQ ID NO:125 is over a region of at least about 150 consecutive residues.

Claim 174 (new): The nucleic acid probe of claim 75, wherein the oligonucleotide consists of at least 150 contiguous nucleotides having at least 96% sequence identity to the nucleic acid sequence of SEQ ID NO:125.

Claim 175 (new): The nucleic acid probe of claim 75, wherein the oligonucleotide consists of at least 200 contiguous nucleotides having at least 95% sequence identity to the nucleic acid sequence of SEQ ID NO:125.